CLAIMS

1. A method for communicating data in a wireless communications system having a base station communicating to at least one of a plurality of terminals over a set of carrier frequencies, the method comprising:

a. periodically monitoring the carrier energy level of each said carrier frequency received at a given terminal to identify a list of optimal frequencies over which the carrier energy level is strong enough to maintain a viable transmission from said base station to said given terminal, wherein said viable transmission provides a given coding gain; and

b. simultaneously transmitting a given set of packet data from said base station to said given terminal over a plurality of frequencies from said list of optimal frequencies identified for said given terminal.

2. The method of claim 1, further comprising the step of maintaining a buffer for buffering data packets to be transmitted from said base station to said given terminal.

3. The method of claim 1, further comprising the step of transmitting a given set of data packets from said given terminal to said base station over two frequencies selected from said list of optimal frequencies identified therefor.

4. The method of claim 1, further comprising the step of repeating steps a and b for each said terminal of said wireless communications system.

5. The method of claim 1, wherein said step of periodically monitoring the carrier energy level of said carrier frequencies comprises the steps of:

a. receiving, at said base station, RF measurements of the carrier level of each carrier received at said given terminal via a radio transmission; and

b. selecting at said base station each carrier frequency having an RF measurement greater than a predetermined RF level to form said list of optimal frequencies, wherein

said predetermining RF level represent a minimum level for supporting a given coding gain.

6. The method of claim 1, wherein said carrier frequencies comprise voice dedicated frequencies and data packet dedicated frequencies.

7. The method of claim 6, wherein said list of optimal frequencies comprises voice dedicated frequencies and data packet dedicated frequencies.

8. The method of claim 7, wherein said step of transmitting said packet data to said given terminal further comprises the steps of:

transmitting said data packets during inactive voice periods when transmitting on said voice dedicated frequencies; and

transmitting said data packets over a plurality of frequencies when transmitting on said packet data dedicated frequencies.

9. The method of claim 1, wherein said wireless system is a fixed wireless access system.

10. The method of claim 9, wherein each said carrier frequency provides full duplex communication path for communications between said base station and said given terminal.

11. The method of claim 10, wherein said full duplex communication paths comprise discrete independent virtual voice channels.

12. The method of claim 11, wherein said full duplex communication paths comprise virtual voice channels.

13. A wireless system for communicating packet data, comprising:

a base station; and

a given set of carrier frequencies over which said base station and at least one terminal communicate said packet data;

each said terminal being operable to periodically monitor each frequency of said set of carrier frequencies to identify a list of optimal frequencies over which the carrier energy level is strong enough to maintain a viable transmission having a given coding gain;

said base station being operable to transmit simultaneously said packet data to a given terminal over a plurality of frequencies from said list of optimal frequencies identified by said given terminal.

14. The wireless system of claim 13, wherein each said terminal is operable to transmit said packet data to said base station over at least one of said list of optimal frequencies identified by said terminal.

15. The wireless system of claim 14, wherein said list of frequencies over which said base station transmits said packet data to said given terminal comprises voice-dedicated frequencies and data packet dedicated frequencies.

16. The wireless system of claim 15, wherein said base station transmits said data packet over said voice dedicated frequencies during inactive voice periods.

17. The wireless system of claim 16, wherein said base station transmits said packet data over a plurality of data packet dedicated frequencies and a voice dedicated frequency.

18. The wireless system of claim 13, wherein each said terminal is operable to report said list of optimal frequencies to said base station.

19. The wireless system of claim 18, wherein said base station is operable to store said reported list of optimal frequencies for each said terminal.

20. The wireless system of claim 13, wherein the system is a fixed wireless access system.

21. The wireless system of claim 20, wherein each of said carrier frequencies provides a full duplex voice communication path for communications between said base station and said at least one terminal.

22. The wireless system of claim 21, wherein said full duplex voice communication paths comprise discrete independent channels.

23. The wireless system of claim 20, wherein said full duplex voice communication paths comprise virtual channels.

24. The wireless system of claim 23, wherein said base station maintains a buffer for temporarily storing said data packets being sent to said at least one terminal.

25. The wireless system of claim 13, wherein said at least one frequency over which said base station transmits said data packets to said given terminal has an inactive voice period thereon.

26. The wireless system of claim 13, wherein at least one frequency over which said base station transmits said packet data to said given terminal comprises two radio frequencies.

27. The wireless system of claim 13, further comprising a controller for maintaining said list of optimal frequencies for each said terminal.

28. The wireless communications system of claim 27, wherein said controller implements a carrier level means to form said list of frequencies, said carrier level means comprising the steps of:

a. receiving at said base station RF measurements, of each carrier frequency received at each terminal, via a radio transmission; and

b. identifying radio frequencies having a received RF measurement greater than a given level to form said list of optimal frequencies.